

(19)



Europäisches Patentamt

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(11)

**EP 1 048 271 A3**

(12)

**EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**13.12.2000 Bulletin 2000/50**

(51) Int. Cl.<sup>7</sup>: **A61B 17/34, A61N 1/05**

(43) Date of publication A2:  
**02.11.2000 Bulletin 2000/44**

(21) Application number: **00109071.1**

(22) Date of filing: **02.05.2000**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

(30) Priority: **30.04.1999 US 303045**

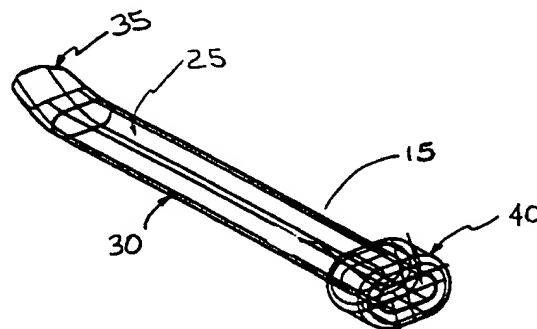
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(54) **Apparatus and method for percutaneous implant of a paddle style lead**

(57) A needle assembly for introduction of a paddle style lead near a spinal column of a patient includes a body having a proximal end and a distal end, a lumen with a continuous oblong cross section, and a paddle style lead adapted to accept a stiffening member. The distal end of the body has an introducer portion where the top side of the introducer has an orifice to allow for protrusion of the paddle style lead from the lumen into the spinal column area. The needle has a hub affixed to the proximal end of the body which is adapted to receive a stylet. The needle may also have a stylet that is inserted within the lumen. The introducer of the needle has a curvature extending from the bottom side toward the top side at the distal end and guides the introduction of the paddle style lead near the spinal column.



**FIG. 3**



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# EUROPEAN SEARCH REPORT

Application Number  
EP 00 10 9071

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 4 141 365 A (FISCHELL ROBERT E ET AL) 27 February 1979 (1979-02-27) * the whole document *	1-3,11, 14,16,17	A61B17/34 A61N1/05
A	US 5 255 691 A (OTTEN LYNN M) 26 October 1993 (1993-10-26) * column 5, line 22 - column 6, line 17; figures *	1,14,15	
A	WO 97 37720 A (MEDTRONIC INC) 16 October 1997 (1997-10-16) * abstract; figures *	1	
A	US 5 669 882 A (PYLES STEPHEN) 23 September 1997 (1997-09-23) * abstract; figures *	1	
A	US 4 285 347 A (HESS STANLEY R) 25 August 1981 (1981-08-25) * abstract; figures *	1	
A	US 4 519 403 A (DICKHUDT EUGENE A) 28 May 1985 (1985-05-28) * column 3, line 18 - line 32; figures *	16,17	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A61B A61N A61M
A	US 4 379 462 A (BORKAN WILLIAM N ET AL) 12 April 1983 (1983-04-12) * column 2, line 62 - column 3, line 5; figures *	16,17,19	
A	WO 97 28844 A (HEARTPORT INC) 14 August 1997 (1997-08-14) * page 20, line 18 - page 21, line 10; figures *	20	
A	US 4 588 398 A (DAUGHERTY CHARLES W ET AL) 13 May 1986 (1986-05-13) * claims 1,5 *	20	
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>18 October 2000</b>	Examiner <b>Kousouretas, I</b>
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document			



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# EUROPEAN SEARCH REPORT

Application Number  
EP 00 10 9071

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
P,A	WO 00 09177 A (BAXTER INT) 24 February 2000 (2000-02-24) * page 10, line 19 - page 11, line 8 * * page 15, line 1 - line 5; figures * -----	20	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>18 October 2000</b>	Examiner <b>Kousouretas, I</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



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Application Number  
EP 00 10 9071

### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number

EP 00 10 9071

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

**1. Claims: 1-15**

A needle assembly for introduction of a paddle style lead in a spinal column comprising a body having lumen with oblong cross section, a hub, a stylet and a paddle style lead.

**2. Claims: 16-19**

A paddle style lead comprising a first and a second side, the first side having a blind hole and a through hole adapted to receive a stiffening member and a stiffening member.

**3. Claim : 20**

A paddle style lead comprising a paddle lead made of at least one temperature controlled material being stiff at a first temperature and flexible at a second temperature.

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 10 9071

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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18-10-2000

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4141365	A	27-02-1979	NONE	
US 5255691	A	26-10-1993	NONE	
WO 9737720	A	16-10-1997	AU 714617 B	06-01-2000
			AU 2424097 A	29-10-1997
			CA 2249602 A	16-10-1997
			EP 0892654 A	27-01-1999
			JP 2000508201 T	04-07-2000
			US 6038480 A	14-03-2000
US 5669882	A	23-09-1997	NONE	
US 4285347	A	25-08-1981	EP 0023410 A	04-02-1981
US 4519403	A	28-05-1985	NONE	
US 4379462	A	12-04-1983	NONE	
WO 9728844	A	14-08-1997	US 5904711 A	18-05-1999
			AU 2113797 A	28-08-1997
US 4588398	A	13-05-1986	NONE	
WO 0009177	A	24-02-2000	AU 5127299 A	06-03-2000